

# PATENT ABSTRACTS OF JAPAN

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(54) MANUFACTURE OF SEMICONDUCTOR DEVICE

(57)Abstract:

PURPOSE: To secure a good bonding property of the fine metal wires to the leads by a method whereinbefore the process of bonding of the fine metal wires and the leadsa laser beam is irradiated on the irradiating area in a state that the irradiating area is being interrupted from the air and the bonding areas of each lead are locally softened by applying heat.

CONSTITUTION: Before the wire-bonding processleads 1 are placed on a processing station 5this processing station 5 is carried in a container 4 from a carrying-in port 4athe carrying-in port 4a and a carrying-out port 4b are blocked upthe air in the container 4 is exhausted from an exhaust port 4ca laser beam 3 from a laser oscillation gun 2 is irradiated on the bonding areas of each lead 1 on the processing station 5 through a glass transmitting window 4d in a state that the degree of vacuum in the container 4 is set at  $10^{-1}$  to  $10^{-4}$  torrs and the said bonding areas are softened by applying heat. The leads 1 are ones to be connected with the electrodes on a semiconductor chip using copper wires by an ultrasonic wave combined thermocompression bonding systemfor example. By this waya good bonding property of the fine metal wires to the leads can be secured.